REMARKS

Pending Claims

No amendments to the claims have been made. Claims 1-19 were previously subject to an election of species requirement on January 19, 2007 and are currently withdrawn from examination. Claims 20-28 are currently pending.

35 U.S.C. § 103 – Claims 20, 21, 23, and 26-28

The Examiner has rejected Claims 20, 21, 23, and 26-28 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,835,255 to Miles ("Miles") in view of Matsumoto et al., "Novel Prevention Method of Stiction Using Silicon Anodization for SOI Structure," ("Matsumoto"). Applicants respectfully disagree.

To support a conclusion that a claim would have been obvious, M.P.E.P. § 2143.02 requires that "one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions." The prior art can only be modified or combined to reject claims as obvious if there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, (Fed. Cir. 1986). Applicants respectfully submit that the Examiner has not established a reasonable expectation of success for modifying Miles using the disclosure of Matsumoto.

Miles discloses an optical display device that functions by modulating light. One of the stated features of the light modulating device disclosed by Miles is that such a device provides "high resolution, full-color images" (Miles, column 3, line 5). The Miles device is dependent upon its ability to reflect and modulate light (*see* Miles, column 2, lines 30-56). In fact, Miles states that lower layer **502** and upper layer **506/508** in the optical device are both mirror layers (Miles, column 13, lines 27-30). The ability of the mirrors to reflect light is further described by Miles at, for example, column 1, line 62 – column 2, line 7 (see below).

> The predetermined impedance characteristic may include reflection of incident electromagnetic radiation in the visible spectrum, e.g., the proportion of incident electromagnetic radiation of a given frequency band that is, on average, reflected by each of the modulation elements. The modulation element may be responsive to a particular electrical

condition to occupy either a state of higher reflectivity or a state of lower reflectivity, and the control circuitry may generate a stream of pulses having a duty cycle corresponding to the proportion of incident radiation that is reflected and places the modulation element in the higher state of reflectivity during each the pulse and in the lower state of reflectivity in the intervals between the pulses. The charac-

It is clear that the Miles device is not simply a micromechanical device. Rather, the Miles device is an optical device whose function depends upon its ability to reflect and modulate light.

Matsumoto discloses a "study made on the application of silicon anodization process to prevent both 'after-rinse stiction' and 'in-use stiction' for SOI sensors" (Matsumoto, p. 153). While the disclosed SOI sensors are micromechanical devices, there is no indication that their performance is dependent on their optical properties. Nor does Matsumoto provide any discussion regarding an SOI sensor's ability to modulate or reflect light. Matsumoto merely states that the "formation of [a] hydrophobic surface such as SAM or fluorocarbon film is one of the effective methods to prevent stiction although these methods require additional fabrication process or specific equipment" (Matsumoto, p. 154). However, Matsumoto does not provide any reason for one of ordinary skill in the art to use either of the self-assembled monolayer ("SAM") or the fluorocarbon film in an optical device, and is silent with regard to whether such use on the reflective surfaces of an optical device would be successful. Therefore, Matsumoto provides no reasonable expectation of success for modifying an optical device to include a hydrophobic layer, because it fails to account for the affect such modification may have on optical performance.

Applicants note that neither fluorocarbon films nor SAMs are necessarily compatible with optical devices that modulate light. U.S. Patent No. 5,730,792 to Camilletti et al., which is cited in the Information Disclosure Statement submitted herewith, describes fluorocarbon polymers as "opaque materials or obstructing agents" in column 5, lines 24-47 (see below).

> Other opaque materials or obstructing agents useful herein include synthetic and natural materials such as oxides, nitrides, borides, and carbides of various metals and non-metals such as glass, phosphorous oxynitride (PON), alumina, titanium dioxide, zinc oxide, zirconium oxide (ZrO_2), and ruthenium oxide (RuO_2); titanates such as potassium titanate and barium titanate; niobates such as lithium niobate ($LiNbO_3$) and lead niobate $Pb(NbO_3)_2$; barium sulfate; calcium carbonate; precipitated diatomite; aluminum silicate or other silicates; pigments and dyes such as crystal violet ($C_{25}H_{30}N_3Cl$) and the cyanines; phosphors; metals such as silver, aluminum, or copper; wollastonite ($CaSiO_3$); mica; kaolin; clay; talc; organic materials such as cellulose, polyimides, phenol resins, epoxies, polybenzocyclobutanes; fluorocarbon polymers such as polytetrafluoroethylene $(C_2F_4)_n$, vinylidene fluoride $H_2C{=}CF_2$, and hexafluoropropylene $CF_3CF{:}CF_2$; high dielectric constant materials such as titanate, niobate, or tungstate salts of metals such as strontium, zirconium, barium, lead, lanthanium, iron, zinc, and magnesium, i.e., barium titanate ($BaTiO_3$), potassium titanate (K_2TiO_3), lead niobate, lithium titanate, strontium titanate, barium strontium titanate, lead lanthanium zirconium titanate, lead zirconium titanate, and lead tungstate.

Additionally, at column 7, lines 61-67, U.S. Patent No. 6,020,047 to Everhart (also cited in the Information Disclosure Statement submitted herewith) discloses that SAMs both reflect and transmit visible light (see below).

> Diffraction of visible light was shown with these compositions. Both reflected and transmitted diffraction patterns were observed when using 5 mW, 670 nM laser illumination. FIG. **3***b* is a photograph of the diffraction pattern formed by visible light shown through the self-assembling monolayer pattern of FIG. **3***a*. Rainbow diffraction colors were observed with transmitted white light.

Thus, the evidence of record establishes that fluorocarbons and SAM's can affect the ability of a mirror layer, such as the mirror layer described by Miles, to reflect light, and Matsumoto does not contradict this evidence. The Miles device would not function properly, *e.g.* provide high resolution, full-color images, if the mirror layers did not adequately reflect light. Therefore, there is no *prima facie* obviousness in view of the evidence of record because the combination of references proposed by the Examiner does not provide a reasonable expectation of success. Applicants respectfully request reconsideration and withdrawal of the rejection.

35 U.S.C. § 103 – Claims 22, 24 and 25

The Examiner has rejected Claims 22, 24, and 25 under 35 U.S.C. § 103(a) as being unpatentable over Miles in view of Matsumoto and further in view of U.S. Patent No. 6,335,224 to Peterson et al. ("Peterson"). Applicants respectfully disagree. As discussed above, no reasonable expectation of success can be derived for placement of a fluorocarbon film or a SAM in the optical device of Miles. Matsumoto is silent with regards to how the light modulating function of the mirror layer in the device of Miles can be maintained upon such a modification. Peterson does not cure this defect. Therefore, Applicants respectfully request withdrawal of the rejection.

Applicants respectfully submit that this application is in condition for allowance, early notification of which would be appreciated. If the Examiner has any questions which may be answered by telephone, he is invited to call the undersigned directly at the telephone number provided below.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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